

Having thus described the invention, it is now claimed:

1. In a fuel delivery system having a housing that rotatably receives a rotor carrying vanes thereon and received within a rotatable cam ring located between the housing and the rotor and freely rotatable relative to each of the housing and rotor, the bearing assembly comprising:

5 a hydrostatic and hydrodynamic bearing member including an annular surface having a central opening dimensioned to receive the associated cam ring therein, the annular surface including a first, high pressure pad and a second, low pressure pad substantially diametrically opposite the first pad, and first and second lands separating the first and second pads for centering the associated cam ring during operation.

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2. The bearing assembly of claim 1 wherein the circumferential extent of the first pad is at least as great as an inner diameter of the associated cam ring.

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3. The bearing assembly of claim 2 wherein circumferential ends of the second pad are wider than circumferential ends of the first pad.

4. The bearing assembly of claim 1 wherein the first and second pads are formed by circumferentially extending grooves that extend an entire width of the bearing.

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5. The bearing assembly of claim 1 further comprising means for preventing rotation of the bearing member.

6. The bearing assembly of claim 5 wherein the preventing means further prevents relative sliding between the cam ring and the bearing member.

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7. A bearing assembly for an associated fuel delivery system having a housing that rotatably receives a rotor carrying vanes thereon, and a cam ring rotatably received between the housing and rotor, and a yoke encompassing the cam ring and selectively movable relative to the housing to vary fuel flow from the system, the bearing assembly comprising:

a bearing member including an annular surface having a central opening therethrough, the annular surface including a first, high pressure pad and a second, low pressure pad substantially diametrically opposite the first pad and separated by first and second lands.

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8. The bearing assembly of claim 7 wherein the circumferential extent of the first pad is at least as great as an associated inner diameter of the associated cam ring.

9. The bearing assembly of claim 8 wherein circumferential ends of the 10 second pad are wider than circumferential ends of the first pad.

10. The bearing assembly of claim 7 wherein the first and second pads are formed by circumferentially extending grooves that extend an entire width of the bearing.

15 11. The bearing assembly of claim 7 further comprising means for preventing rotation of the bearing member.

12. The bearing assembly of claim 11 wherein the preventing means further prevents relative sliding between the cam ring and the bearing member.

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13. The bearing assembly of claim 7 further comprising a vent passage extending through the bearing and communicating with the second, low pressure pad to prevent high pressure from building.

25 14. The bearing assembly of claim 13 wherein the vent passage has a cross-sectional area greater than high pressure feed orifices whereby a pressure differential is established across the yoke.

30 15. The bearing assembly of claim 14 wherein the cam ring moves between the first and second pads, and thereby varies a clearance between the lands and the cam ring.

16. The bearing assembly of claim 7 wherein the bearing assembly, comprised of the yoke and cam ring, is adapted for rolling movement relative to the housing whereby the cam ring undergoes selective linear translation.

5 17. The bearing assembly of claim 7 wherein the cam ring is adapted for linear translation relative to the housing to minimize pressure pulsations during operation of the fuel delivery system.